

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P174902

Luminaire Tested: **LDA4A09827D010TE LAR35FL 4LA1 30° Tilt**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P174902  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26217)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA4A09827D010TE LAR35FL 4LA1 30° Tilt  
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 35° Flood Optic, at 30° tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 880.8 lumens  
Efficiency: N/A  
Efficacy: 63.6 lumens/watt  
Spacing Criteria (0/90/45): 2.3 / 0.86 / 1.17  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

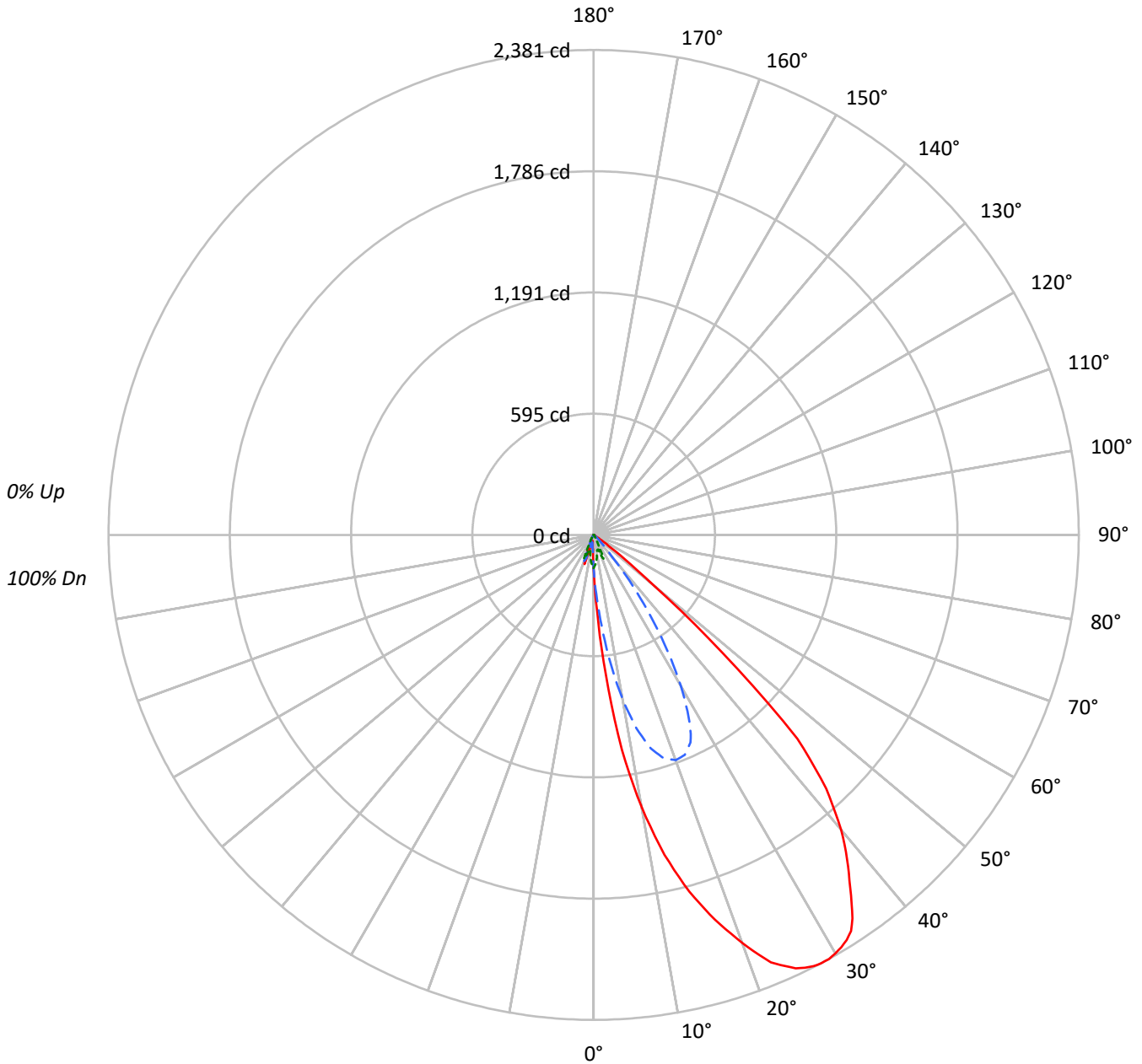
Input Watts (W): 13.84  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P174902

CATALOG NUMBER: LDA4A09827D010TE LAR35FL 4LA1 30° Tilt

### Luminous Intensity Polar Plot





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CATALOG NUMBER: LDA4A09827D010TE LAR35FL 4LA1 30° Tilt

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92																			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84																			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76																			
4	93	85	78	74	92	84	78	73	81	76	72	79	75	71	77	74	70	69																			
5	88	78	71	66	86	77	71	66	75	70	65	73	68	65	72	67	64	62																			
6	82	72	65	60	81	71	64	60	69	64	59	68	63	59	66	62	58	57																			
7	77	66	59	54	76	66	59	54	64	58	54	63	58	54	62	57	53	52																			
8	72	61	54	50	71	61	54	49	59	54	49	58	53	49	57	52	49	47																			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43																			
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	20167	20167	20167
5°	84728	16876	6228
10°	170213	11611	3783
15°	231527	9424	8517
20°	279824	14308	15791
25°	319569	8506	4396
30°	337909	4002	2037
35°	332369	1762	753
40°	304160	886	209
45°	246706	436	0
50°	73149	249	0
55°	13247	280	0
60°	2492	321	0
65°	613	379	0
70°	144	469	0
75°	0	620	0
80°	0	1208	0
85°	0	2406	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	29.7	3.4
10°-20°	153.8	17.5
20°-30°	269.4	30.6
30°-40°	270.6	30.7
40°-50°	142.5	16.2
50°-60°	11.9	1.3
60°-70°	1.2	0.1
70°-80°	0.9	0.1
80°-90°	0.8	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	453.0	51.4
0°-40°	723.5	82.1
0°-60°	877.9	99.7
0°-90°	880.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	880.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	164	164	164	164	164	
5°	684	447	136	62	50	88
15°	1813	1085	74	50	67	518
25°	2348	1124	62	36	32	1074
35°	2207	488	12	6	5	1365
45°	1414	50	2	1	0	969
55°	62	6	1	0	0	93
65°	2	1	1	1	0	3
75°	0	1	1	1	0	0
85°	0	1	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P174902

CATALOG NUMBER: LDA4A09827D010TE LAR35FL 4LA1 30° Tilt

**CANDELA DISTRIBUTION (FULL):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5	163.5
2.5°	371.1	371.5	371.9	374.9	368.2	366.5	363.5	359.4	345.5	288.5	217.6
5°	684.3	689.3	688.1	683.9	673.4	667.5	658.7	649.5	611.8	447.4	270.0
7.5°	1063.4	1073.0	1070.9	1064.6	1047.0	1039.1	1016.8	1004.7	947.6	635.3	309.0
10°	1359.0	1384.6	1385.0	1379.1	1352.7	1341.4	1318.3	1296.5	1224.4	819.3	327.1
12.5°	1608.9	1609.3	1629.0	1624.4	1593.8	1588.8	1569.5	1536.8	1460.9	972.8	327.1
15°	1813.1	1840.8	1836.2	1831.1	1798.8	1792.1	1773.7	1743.5	1655.0	1085.2	311.1
17.5°	1981.7	2006.4	1999.3	1993.8	1961.5	1946.9	1926.7	1890.7	1793.4	1151.8	278.0
20°	2131.8	2155.3	2141.0	2131.4	2088.2	2070.1	2040.8	1999.3	1888.2	1176.6	239.4
22.5°	2271.8	2296.6	2278.5	2265.1	2209.4	2174.6	2133.0	2080.6	1949.8	1168.6	218.9
25°	2348.1	2380.4	2363.2	2352.8	2299.5	2258.8	2203.9	2136.4	1985.0	1123.8	164.8
26°	2364.9	2398.9	2382.5	2373.3	2319.2	2276.0	2217.3	2146.5	1988.0	1086.9	127.1
27°	2376.7	2414.4	2395.5	2383.8	2328.0	2281.9	2220.7	2146.9	1983.3	1037.0	101.1
28°	2381.3	2422.8	2399.7	2385.5	2327.6	2277.3	2212.3	2137.7	1971.2	979.5	86.0
29°	2380.9	2426.1	2399.3	2383.8	2322.1	2266.4	2199.7	2124.7	1954.4	919.6	77.6
30°	2372.5	2421.9	2395.1	2375.4	2309.1	2249.2	2181.7	2106.6	1935.5	854.1	69.2
31°	2361.1	2411.9	2383.8	2359.5	2287.8	2222.8	2156.5	2082.3	1910.4	784.1	63.3
32°	2344.8	2395.5	2364.5	2332.6	2257.6	2189.6	2125.9	2053.8	1879.8	710.3	56.2
33°	2318.8	2363.7	2327.6	2290.7	2215.6	2151.9	2091.5	2020.7	1845.0	633.6	48.6
34°	2271.4	2310.8	2273.5	2236.2	2169.1	2110.0	2052.1	1981.7	1804.3	562.7	41.9
35°	2207.3	2240.8	2207.3	2175.8	2116.7	2061.8	2006.4	1937.6	1755.2	488.1	36.1
36°	2141.8	2171.2	2140.2	2115.4	2058.8	2009.8	1958.2	1886.9	1699.9	417.2	31.9
37°	2080.6	2107.0	2078.5	2053.8	2005.1	1955.3	1904.1	1831.1	1638.7	349.3	26.4
38°	2019.8	2043.3	2019.0	1991.3	1946.4	1895.7	1844.1	1769.5	1570.3	285.1	22.6
39°	1956.5	1975.8	1952.3	1924.2	1878.5	1828.2	1775.4	1698.2	1491.9	218.5	19.7
40°	1889.0	1907.0	1878.1	1852.9	1807.2	1755.7	1701.6	1621.5	1406.8	146.3	16.8
42.5°	1689.4	1700.3	1676.0	1641.2	1595.5	1538.9	1473.5	1383.7	1134.7	77.2	11.7
45°	1414.3	1416.4	1397.6	1334.2	1273.0	1185.4	1087.7	953.1	659.6	50.3	7.5
47.5°	853.7	848.7	818.9	764.8	707.8	615.1	523.7	431.1	256.2	29.4	5.0
50°	381.2	375.3	360.6	332.5	299.4	265.0	224.3	189.9	124.5	15.9	3.4
51°	276.3	271.3	260.4	239.0	214.7	190.4	162.3	138.8	93.1	13.0	2.9
52°	194.1	191.2	183.7	168.6	155.1	136.3	117.0	102.3	70.0	10.5	2.1
53°	135.4	133.3	128.7	118.7	110.7	96.9	84.7	73.0	50.7	8.4	2.1
54°	91.8	90.6	87.6	80.9	74.2	66.7	57.9	51.2	35.6	6.7	1.7
55°	61.6	60.8	58.3	54.9	51.2	46.5	40.7	35.6	25.2	5.5	1.3
57.5°	22.6	22.6	21.8	20.5	19.3	18.0	16.4	14.7	11.7	3.4	1.3
60°	10.1	9.6	9.6	9.2	8.8	8.4	8.0	7.1	5.9	2.1	1.3
61°	7.5	7.5	7.1	6.7	6.7	6.3	5.9	5.5	4.6	1.7	1.3
62°	5.5	5.5	5.5	5.0	5.0	4.6	4.6	4.2	3.4	1.3	1.3
63°	4.2	4.2	4.2	3.8	3.8	3.8	3.4	3.4	2.5	1.3	1.3
64°	2.9	2.9	2.9	2.9	2.9	2.9	2.5	2.5	2.1	0.8	1.3
65°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.7	0.8	1.3
66°	1.7	1.7	1.7	1.7	1.7	1.7	1.3	1.3	1.3	0.8	1.3



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**CANDELA DISTRIBUTION (continued):**

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	1.3
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.3
77.5°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.8	1.3
80°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.8	1.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.8	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
0°	163.5	163.5	163.5	163.5	163.5
2.5°	150.5	105.2	83.9	75.9	73.4
5°	136.3	78.8	62.5	53.7	50.3
7.5°	114.5	65.0	47.0	39.0	36.5
10°	92.7	53.7	38.2	31.9	30.2
12.5°	79.2	46.5	35.6	33.1	33.1
15°	73.8	49.1	49.5	59.5	66.7
17.5°	75.9	76.7	119.9	145.9	150.5
20°	109.0	138.0	136.7	124.1	120.3
22.5°	126.2	91.0	68.8	56.6	54.5
25°	62.5	41.5	35.6	32.7	32.3
26°	47.4	34.8	31.0	29.4	28.5
27°	39.4	30.6	27.7	25.6	24.7
28°	35.2	27.3	23.9	21.8	21.0
29°	31.9	23.5	20.1	18.0	17.6
30°	28.1	19.7	16.8	14.7	14.3
31°	23.9	16.4	13.4	12.2	11.3
32°	20.1	13.4	10.9	9.6	8.8
33°	16.8	10.9	9.2	8.0	7.1
34°	14.3	9.2	7.5	6.3	5.9
35°	11.7	7.5	6.3	5.5	5.0
36°	10.1	6.7	5.0	4.2	3.8
37°	8.8	5.5	4.2	3.4	3.4
38°	7.5	4.6	3.8	2.5	2.5
39°	6.3	3.8	2.9	2.1	2.1
40°	5.5	3.4	2.5	1.7	1.3
42.5°	3.8	2.1	1.7	0.8	0.4
45°	2.5	1.7	0.8	0.4	0.0
47.5°	1.7	1.3	0.8	0.4	0.0
50°	1.3	1.3	0.8	0.0	0.0
51°	1.3	0.8	0.8	0.0	0.0
52°	1.3	0.8	0.4	0.0	0.0
53°	1.3	0.8	0.4	0.0	0.0
54°	1.3	0.8	0.4	0.0	0.0
55°	1.3	0.8	0.4	0.0	0.0
57.5°	1.3	0.8	0.4	0.0	0.0
60°	1.3	0.8	0.8	0.0	0.0
61°	1.3	1.3	0.8	0.0	0.0
62°	1.3	1.3	0.8	0.0	0.0
63°	1.3	1.3	0.8	0.0	0.0
64°	1.3	1.3	0.8	0.4	0.0
65°	1.3	1.3	0.8	0.4	0.0
66°	1.3	1.3	0.8	0.4	0.0





TEST NUMBER: P174902

CATALOG NUMBER: LDA4A09827D010TE LAR35FL 4LA1 30° Tilt

**CANDELA DISTRIBUTION (continued):**

	90°	112.5°	135°	157.5°	180°
72.5°	1.3	1.3	0.8	0.4	0.0
75°	1.3	1.3	0.8	0.4	0.0
77.5°	1.7	1.3	0.8	0.4	0.0
80°	1.7	1.3	0.8	0.4	0.0
82.5°	1.7	1.3	0.8	0.4	0.0
85°	1.7	1.3	0.8	0.4	0.0
87.5°	1.7	1.3	0.8	0.4	0.0
90°	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°







67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.3
70°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	1.3







67.5°	1.3	1.3	0.8	0.4	0.0
70°	1.3	1.3	0.8	0.4	0.0



(END OF REPORT)